**Delayed post-hatch feeding affects the performance and immunocompetence differently in male and female broiler chickens**

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**Abstract**

Effect of post-hatch (PH) feed deprival (FD) for 6, 12, 24 and 36h on the performance, immune organ development, *in vivo* immune response and expression of immune gene was studied in male and female broiler chickens. At 21d, lower (P<0.05) body weight (BW) was recorded in 36h FD male and female birds, however at 42d PH, only the 36h FD female birds had lower BW compared to the control and other FD birds. Feed intake during 0-21d PH was lower (P=0.004) in 36h FD birds but the feed conversion ratio didn’t differ between control and FD birds. The heterophil count and H:L ratio significantly increased in 12-36h FD male birds but only in 24-36h FD females. The humoral immune response to sheep RBC was similar in FD and control birds but cellular immune response to PHAP was higher in 12 and 24h FD female birds. At 36h and 7d, expression of *IL-6*, *TLR-2* and *TNF-α* gene decreased as the FD period increased while at 14d it was increased compare to control. It may be concluded that PH feed deprival for first 24h did not affect growth performance but improved immune response in female broilers.

**Keywords:** Broiler chickens; cytokines; feed deprivation; immuno-competence; performance.